

In re Application of: Joseph ITSKOVITZ-ELDOR et al
Serial No.: 10/536,734
Filed: May 27, 2005
Office Action Mailing Date: October 20, 2009

Examiner: Taeyoon Kim
Group Art Unit: 1651
Attorney Docket: 29601
Confirmation No.: 3958

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 193-202, 205, 214-234 are in this Application. Claims 194, 201 and 216-234 have been withdrawn from consideration. Claims 193, 195-200, 202, 205, 214 and 215 have been rejected. Claims 193, 197, 199, 200 and 205 have now been amended. Claims 195-196 and 202 have now been cancelled.

35 U.S.C. § 103 Rejections

The Examiner has rejected claims 193, 195-200 and 202, 205, 214 and 215 under U.S.C. 103(a) as being unpatentable over Lumelsky et al. in view of Dang et al. in further view of Ling et al. The Examiner has further rejected claims 193, 214 and 215 under U.S.C. 103(a) as being unpatentable over Lumelsky et al. in view of Dang et al. in further view of Thomson et al.

The Examiner's rejections are respectfully traversed. Claims 193, 197, 199, 200 and 205 have now been amended. Claims 195-196 and 202 have now been cancelled.

The Examiner states that although Lumelsky et al. do not teach the additional cell selection step of the presently claimed invention (which leads to formation of surface bound clusters), Dang et al. teach cell dissociation for the purpose of performing flow cytometry and as such, it would have been obvious for a person of ordinary skill in the art at the time the invention was made to dissociate the EBs of Lumelsky et al. to obtain single cells and isolate cells having pancreatic progenitor phenotype as taught by Dang et al.

As was argued in the previous response, Applicant disagrees with the Examiner and provides evidence (in the form of the Kania et al. Article) that one of ordinary skill in the art would not modify the methodology of Lumelsky to include an additional step which leads to formation of surface bound clusters.

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However, in the interest of expediting prosecution of this case, Applicant has elected to amend independent claim 193 to include additional steps of culturing and isolation which clearly distinguish the claimed invention from the prior art cited by the Examiner.

Amended claim 193 now includes step (d) which teaches dissociation of the surface bound cell clusters of step (c) into single cells and culturing of the dissociated cells under non-adherent conditions to form suspended islet like cell clusters.

As was unexpectedly discovered by the present inventors (see section [0322] of the published application), adding step (d) to the present methodology lead to an unexpected formation of suspended islet like cell clusters which were characterized by an unexpected increase in insulin secretion levels and an increased proportion of insulin secreting cells relative to the clusters formed in step (c).

Amended claim 193 further includes step (e) which teaches isolation of the suspended islet like cell clusters.

Although Applicant disagrees with the obviousness rejection based on the combined teachings of Lumelsky et al. and Dang et al., it will be appreciated that even if one of ordinary skill in the art combined Lumelsky et al. with Dang et al. to generate the surface bound clusters of step (c) and continued to dissociate these clusters into single cells, such an ordinary skilled artisan would not further culture such cells for the purpose of forming surface bound clusters, nor could such an artisan predict that such conditions would lead to enrichment in insulin producing cells and increased insulin production.

As is clearly described in the examples section of the instant application, the discovery that such surface clusters are formed and that such clusters are highly enriched for insulin producing cells was unexpected and thus could not be predicted by the ordinary skilled artisan

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As such, Applicant strongly believes that the present invention as now claimed is patentable over Lumelsky and Dang et al. or Lumelsky et al. and Dang et al. in combination with Thomson et al.

In view of the above amendments and remarks it is respectfully submitted that claims 193, 197-200, 205 and 214-215 are now in condition for allowance. A prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,

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